COURSE SPECIFICATION

Advanced Immunology

Faculty of Medicine– Mansoura University

(A) Administrative information

(1) Programme offering the course:	**Postgraduate Doctorate degree of Medical Parasitology**
(2) Department offering the programme:	**Department of Medical Parasitology**
(3) Department responsible for teaching the course:	**Department of Medical Parasitology**
(4) Part of the programme:	**Second part**
(5) Date of approval by the Department`s council	9-5-2106
(6) Date of last approval of programme specification by Faculty council	9-8-2016
(7) Course title:	**Advanced Immunology**
(8) Course code:	**(PAR 608 AI)**
(9) Total teaching hours:	60/ 30 weeks
(10) Credit hours	**4 hours**

(B) Professional information

(1) Course aims:

The aims of the program are as follows:

1. Enable the student to comprehend in depth all features of parasites biology, host–parasite relationships, environmental and host factors controlling parasitic diseases.
2. Help the student to recognize in-depth knowledge concerning the immune response patterns and host signaling pathways in parasitic infections as an essential prerequisite for the development of effective control programs.
3. Provide the student the substantial knowledge about the advanced immunological principles, and their possible applications in Parasitology field.
4. Qualify the student to update and use the gained scientific information in parasitic immunology regarding research and education fields.

(2) Intended Learning Outcomes (ILOs):

On successful completion of the course, the candidate will be able to:

A. Knowledge and Understanding

a1. Define principles of immunomics and its applicable techniques in Parasitology field.

a2. Elucidate update in immunotherapy against parasitic diseases.

a3. Explore the recent applications of helminthic therapy as an immunotherapy against auto-immune diseases and immune disorders.

a4. Analyze the host-influences and-signaling pathways in parasitic infections.

a5. Identify different parasitic antigens.

a6. Recognize the different anti-parasitic blocking agents and the underlined targeted pathway/s.

a7. Discuss methods used in production and application of monoclonal antibodies in parasitological studies.

a8. Realize the utilization and usefulness of stem cells in the diagnosis and treatment of *Schistosoma*-induced hepatic fibrosis.

a9. Explain recent advances in vaccine development against various parasitological infections.

B. Intellectual skills

The Postgraduate Degree provides opportunities for candidates to achieve and demonstrate the following intellectual qualities:

b1. Solve problem based exercises.

b2. Demonstrate update in vaccination and immunotherapy for important public health parasitic problems.

b3. Design guidelines for a control program for a particular parasitic disease/s and reveal potential targets for host-based specific antiparasitic chemotherapy.

b4. Select proper immunological diagnostic tools and to justify their uses, advantages and indications.

C. Professional skills

The Postgraduate Degree provides opportunities for candidates to demonstrate the following professional skills:

c1. Apply the principles of diagnosis, treatment and control of parasitic diseases.

D. Communication & Transferable skills

The Postgraduate Degree provides the opportunity to demonstrate the following transferable skills:

d1. Review the scientific literature on a given research topic.

(3) Curriculum structure and contents:

Course contents

Elective course

Subjects	Lectures	Total Teaching Hours
- Immunomics	2x2	4
- Advances in role of immunotherapy against parasitic infections	1x2	2
- Update on influence of helminth infection on expression of parasitic and non-parasitic infections, autopy, asthma, diabetes, cancer and autoimmune diseases	3x2	6
- Analysis of host signaling pathways in parasitic infections and their blocking drugs	4x2	8
- Monclonal antibodies production and applications in Parasitology	4x2	8
- Current status of vaccine against schistosomiasis	5x2	10
- Stem cells applications in *Schistosoma*-induced liver injury and fibrosis	3x2	6
- Filaria vaccines	2	2
- Hookworm vaccines	2	2
- Malaria vaccines	4x2	8
- Vaccine development against Chagas' disease	2	2
- *Leishmania* vaccination strategies	2	2

(4) Teaching methods:

4.1: Lectures.

4.2: Power point presentation.

4.3: Essay and Literature review discussion.

4.4: Seminar one hour/ 4weeks about the recent advances in the parasite immunology field.

(5) Assessment methods:

5.1. Written exam for assessment of knowledge and intellectual ILOS (at the end of third semester).

5.2. MCQ for assessment of knowledge and intellectual ILOS (at the end of third semester).

Percentage of each assessment to the total mark:

Tools	Marks	Percentage of the total mark
Continuous assessment (MCQ)	10	20
Written exam	40	80
Total	50	

Other assessment without marks: seminars as described above included in the log book.

(6) References of the course:

Text books(available at the library):

- Immunity to Parasitic Infections, Tracy JL, 2012.
- Principles and Practice of Clinical Parasitology, Gillespie SH and Pearson RD. John Wiley and Sons; LTD. 2001.

Periodicals:

- Journal of Immunology.
- Clinical Microbiology Review.
- Clinical and Experimental Immunology.
- Clinical Review.
- Parasite Immunology.
- Journal of Infection and Immunity.
- Proteomics.
- Journal of Stem Cells & Regenerative Medicine.
- International Journal of Stem Cells.
- Experimental Biology & Medicine.
- Vaccines.
- Human Vaccines.
- Advances in Parasitology.
- Trends in Parasitology.
- PLoS Neglected Tropical Diseases.
- PLoS One.
- PLoS Pathogens.
- PLos Medicine.
- Current Pharmaceutical Design.
- International Journal of Parasitology.
- Acta Tropica.
- Parasitology Research.
- Parasitology.
- Experimental Parasitology.
- Journal of Parasitology.
- Journal of Parasitology Research.
- Annals of Tropical Medicine and Parasitology.
- Malaria Journal.
- American Journal of Tropical Medicine and Hygiene.
- Journal of Infectious Diseases.

Web sites:

- **http://www.ncbi.nlm.nih.gov/pubmed/**
- **http://www.ncbi.nlm.nih.gov/gquery/**

(7) Facilities and resources mandatory for course completion:

Lecture halls and data show.

Course coordinator: Prof. Samar Nagah El-Beshbishi

Head of the department: **Prof.** Hala Ahmed El-Nahas

Date: ----------